

Predictors of likelihood of sharing disinformation on social media: Technical report for dataset.

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This dataset was collected as part of a project evaluating the effect of a number of predictors on the likelihood of individuals onward-sharing of disinformation on social media platforms. Four experimental studies were performed, with characteristics of the messages being manipulated and characteristics of the individuals being measured. The psychometric measures used were the New Media Literacy Scale (Koc & Barut, 2016), the Social and Economic Conservatism Scale (Everett, 2013), and a Five-Factor personality questionnaire (Buchanan, Johnson, & Goldberg, 2005) derived from the International Personality Item Pool (IPIP; Goldberg, 1999) that provides indices of Extraversion, Neuroticism, Openness to Experience, Agreeableness and Conscientiousness. The methodology of each study is described below.

Study 1

Study 1 collected data from a UK sample, using stimuli relevant to the UK. The study was completed online. Participants were members of research panels sourced through the research company Qualtrics. For all studies in this data collection, ethical approval came from both the University of Westminster Research Ethics Committee and the Lancaster University Security Research Ethics Committee. Data collection occurred between 10/10/19 and 5/11/19.

Method

Participants were asked to rate their likelihood of sharing three simulated Facebook posts. The study used an experimental design, manipulating levels of authoritative and consensus apparent in the stimuli.

Materials

A short questionnaire was used to capture demographic information (gender; country of residence; education; age; occupational status; political orientation expressed as right, left or centre; frequency of Facebook use). Individual differences in personality, political orientation, and digital / new media literacy were measured using established validated questionnaires. Ecologically valid stimuli were used, with their presentation being modified across conditions to vary authoritative and consensus markers.

Personality was measured using a 41-item Five-Factor personality questionnaire (Buchanan, Johnson, & Goldberg, 2005) derived from the International Personality Item Pool (IPIP; Goldberg, 1999). The measure provides indices of Extraversion, Neuroticism, Openness to Experience, Agreeableness and Conscientiousness.

Conservatism was measured using the 12-item Social and Economic Conservatism Scale (SECS; Everett, 2013), which is designed to measure political orientation along a left-right; liberal-conservative continuum. While the measure provides indices of different aspects of conservatism, it also provides an overall conservatism score.

Digital / New Media literacy was measured using the 35-item New Media Literacy Scale (NMLS; Koc & Barut, 2016). This is a theory-based self-report measure of competences in using, critically interrogating, and creating digital media technologies and messaging. While the measure provides indices of different aspects of new media literacy, it also provides an overall score.

Participants were asked to rate their likelihood of sharing three genuine examples of 'fake news' that had been previously published online. A set of three

stimuli was used to reduce the likelihood that any effects found were peculiar to a specific story. One was titled “Censored video: watch Muslims attack men, women & children in England”; one was titled “Revealed: UN plan to flood America with 600 million migrants”; the third was “‘Child refugee’ with flagship Samsung phone and gold watch complains about Swedish benefits rules”.

The authoritativeness manipulation was achieved by pairing the stimuli with sources regarded as relatively high or low in authoritativeness. The source was shown above the stimulus being rated, in the same way as the avatar and username of someone who had posted a message would be on Facebook.

The consensus manipulation was achieved by pairing the stimuli with indicators of the number of shares and likes the story had. The indicators were shown below the stimulus being rated, in the same way as they normally would be on Facebook. The information was presented using the same graphical indicators as would be the case on Facebook, accompanied by the (inactive) icons for interacting with the post, in order to maximise ecological validity.

Procedure

The study was conducted completely online, using materials hosted on the Qualtrics research platform. Participants initially saw an information page about the study, and on indicating their consent then proceeded to the demographic items. They then completed the personality, conservatism and new media literacy scales. Each of these was presented on a separate page, except the NMLS which was split across three pages.

Participants were then asked to rate the three disinformation items. For each, they saw an introductory paragraph stating “A friend of yours recently shared this on Facebook, commenting that they thought it was important and asking all their friends to share it:”. Below this was the combination of source, story, and consensus indicators, presented together in the same way as a genuine Facebook post would be. They then rated the likelihood of them sharing the post to their own public timeline, on an 11-point scale anchored at ‘Very Unlikely’ and ‘Very Likely’. This was repeated for the second and third stimuli, each on a separate page. Having rated each one, participants were then shown all three stimuli again, this time on the same page. They were asked to rate each one for “how likely do you think it is that the message is accurate and truthful” and “how likely do you think it is that you have seen it before today”, on 5-point scales anchored at ‘Not at all likely’ and ‘Very likely’. Participants were randomized to different combinations of source and story. Each participant saw one combination of authoritativeness and consensus: there were 24 distinct sets of stimuli.

After rating the stimuli, participants were asked two further questions: “Have you ever shared a political news story online that you later found out was made up?”, and “And have you ever shared a political news story online that you thought AT THE TIME was made up?”, with ‘yes’ or ‘no’ response options. This question format directly replicated that used in Pew Research Centre surveys, e.g. Barthel et al. (2016).

Finally, participants were given the opportunity once again to give or withdraw their consent for participation. They then proceeded to a debriefing page.

Data screening and processing

Prior to delivery of the sample, Qualtrics performed a series of quality checks and ‘data scrubbing’ procedures to remove and replace participants with response

patterns suggesting inauthentic or inattentive responding. These included speeding checks and examination of response patterns. On delivery of the initial sample ($N=688$) further screening procedures were performed. Sixteen respondents were identified who had responded with the same scores to substantive sections of the questionnaire ('straightlining'). These were removed, leaving $N=672$. These checks and exclusions were carried out prior to any data analysis.

Participants

Qualtrics was contracted to provide a sample of Facebook users that was broadly representative of the UK 2011 census population in terms of gender; the split between those who had post-secondary-school education and those who had not; and age profile (18+). Quotas were used to assemble a sample comprising approximately one third each self-describing as left-wing, centre and right-wing in their political orientation.

Study 2

Study 2 set out to replicate Study 1, but presented the materials as if they had been posted on Twitter rather than Facebook. The study was completed online, using paid respondents sourced from the Prolific research panel (www.prolific.co). Data collection occurred between 17/1/20 and 24/1/20.

Method

The methodology exactly replicated that of Study 1, except in the case of details noted below.

Materials

Measures and materials were the same as used in Study 1. The key difference from Study 1 was in the presentation of the three stimuli, which were portrayed as having been posted to Twitter rather than Facebook. Participants also indicated their level of Twitter, rather than Facebook, use.

Procedure

The procedure replicated Study 1, save that in this case the NMLS was presented on a single page. Before participants saw each of the three disinformation items, the introductory paragraph stated "A friend of yours recently shared this on Twitter, commenting that they thought it was important and asking all their friends to retweet it:", and they were asked to indicate the likelihood of them 'retweeting' rather than 'sharing' the post.

Data screening and processing

Data submissions were initially obtained from 709 participants. A series of checks were performed to ensure data quality, resulting in a number of responses being excluded. One individual declined consent. Eleven were judged to have responded inauthentically, with the same responses to all items in substantive sections of the questionnaire ('straightlining'). Twenty were not active Twitter users: three individuals visited Twitter 'not at all' and seventeen 'less often' than every few weeks. Three participants responded unrealistically quickly, with response durations shorter than four minutes (the same value used as a speeding check by Qualtrics in

Study 1). All of these respondents were removed, leaving $N=674$. These checks and exclusions were carried out prior to any data analysis.

Participants

The target sample size was planned to exceed $N=614$, as in Study 1. No attempt was made to recruit a demographically representative sample: instead, sampling quotas were used to ensure the sample was not homogenous with respect to education (pre-degree vs. undergraduate degree or above), age (under 40 vs. over 40) and political preference (left, centre or right wing orientation). Additionally, participants had to be UK nationals resident in the UK; active Twitter users; and not participants in prior studies related to this one. Each participant received a reward of £1.25.

Study 3

Study 3 set out to replicate Study 1, but presented the materials as if they had been posted on Instagram rather than Facebook. The study was completed online, using paid respondents sourced from the Prolific research panel. Data collection occurred between 14/1/20 and 16/1/20.

Method

The methodology exactly replicated that of Study 1, except in the case of details noted below.

Materials

Measures and materials were the same as used in Study 1. The only difference from Study 1 was in the presentation of the three stimuli, which were portrayed as having been posted to Instagram rather than Facebook.

Procedure

The procedure replicated Study 1, save that in this case the NMLS was presented on a single page. Before participants saw each of the three disinformation items, the introductory paragraph stated “Imagine that you saw this post on your Instagram feed:” and they were asked to indicate the probability of them ‘liking’ the post.

Data screening and processing

Data submissions were initially obtained from 692 participants. A series of checks were performed to ensure data quality, resulting in a number of responses being excluded. Four individuals declined consent. Twenty-one were judged to have responded inauthentically, with the same scores to substantive sections of the questionnaire (‘straightlining’). Five did not indicate they were located in the UK. Ten were not active Instagram users: three individuals visited Instagram ‘not at all’ and seven ‘less often’ than every few weeks. Two participants responded unrealistically quickly, with response durations shorter than four minutes (the same value used as a speeding check by Qualtrics in Study 1). All of these respondents were removed, leaving $N=650$. These checks and exclusions were carried out prior to any data analysis.

Participants

The target sample size was planned to exceed $N=614$, as in Study 1. No attempt was made to recruit a demographically representative sample: instead, sampling quotas were used to ensure the sample was not homogenous with respect to education (pre-degree vs. undergraduate degree or above) and political preference (left, centre or right-wing orientation). Sampling was not stratified by age, given that Instagram use is associated with younger ages, and the number of older Instagram users in the Prolific pool was limited at the time the study was carried out. Additionally, participants had to be UK nationals resident in the UK; active Instagram users; and not participants in prior studies related to this one. Each participant received a reward of £1.25.

Study 4

Study 4 set out to replicate Study 1, but with a US sample and using US-centric materials. The study was completed online, using as participants members of research panels sourced through the research company Qualtrics. Data collection took place between 21/11/19 and 22/1/20.

Method

The methodology exactly replicated that of Study 1, except in the case of details noted below.

Materials

Measures and materials were the same as used in Study 1. The only difference from Study 1 was in the contents of the three disinformation exemplars, which were designed to be relevant to a US rather than UK audience. One was titled “Flashback: Obama’s attack on internet freedom”; one was titled “Revealed: UN plan to flood America with 600 million migrants” (also used in Study 1-3); the third was “Surgeon who exposed Clinton foundation corruption in Haiti found dead in apartment with stab wound to the chest”.

Procedure

The procedure replicated Study 1, save that in this case the NMLS was presented across two pages.

Data screening and processing

Prior to delivery of the sample, Qualtrics performed a series of quality checks and ‘data scrubbing’ procedures to remove and replace participants with response patterns suggesting inauthentic or inattentive responding. These included speeding checks and examination of response patterns. On delivery of the initial sample ($N=660$) further screening procedures were performed. Nine respondents were identified who had responded with the same scores to substantive sections of the questionnaire (‘straightlining’), and one who had not completed any of the personality items. Twelve respondents were not active Facebook users: Six reported using Facebook ‘not at all’ and a further six less often than ‘every few weeks’. All of these were removed, leaving $N=638$. These checks and exclusions were carried out prior to any data analysis.

Participants

The target sample size was planned to exceed $N=614$, as in Study 1. Qualtrics was contracted to provide a sample of active Facebook users that was broadly representative of the US population in terms of gender; education level; and age profile (18+). Sampling quotas were used to assemble a sample comprising approximately one third each self-describing as left-wing, centre and right-wing in their political orientation. Sampling errors on the part of Qualtrics led to over-recruitment of individuals aged 65 years, who make up 94 of the 160 individuals in the 60-69 age group. As a consequence, the 60-69 age group is itself over-represented in this sample compared to the broader US population.

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